

## **Descriptive Summary of the Changes in Coastal Southern Maine, June 9, 1986, to June 12, 1993**

Forested lands dominated the landscape of southern Maine with over 550,000 acres (approximately 24 percent of the land) covered by mixed and deciduous forests. At more than 30,000 acres, forest loss constituted the greatest change detected by the C-CAP land cover analysis in Southern Maine. The majority of the 30,000 acres of forest conversion documented between 1986 and 1993 was attributed to human development. Changes due to development were evidenced by the direct transition of 3,300 acres of forest to high and low intensity development, over 15,000 acres to grassland, and over 10,000 acres to scrub/shrub as the forests are cleared and prepared for development.

When forests are converted to low intensity development, such as residential neighborhoods, the impact to the affected forests may be less because, typically, 20 to 50 percent of the vegetative cover remains in residential neighborhoods through the incorporation of large yards, parks, and trees. High intensity development, such as industrial parks, parking lots, and highways, impacts once-forested areas severely as the area is no longer predominated by vegetation; rather the landscape is dominated by buildings and paved surfaces.

A smaller component of forest change captured in the southern Maine data set was indicative of the cyclic silviculture process, which involves the harvest and reforestation of evergreen tree stands. These changes were often captured as forests changing to grasslands, the grasslands growing to scrub/shrub, and the scrub/shrub eventually returning to mature forests. However, silviculture is not a major industry in this portion of Maine, with only a small portion of the landscape, about 5,000 acres, in the cycle.

Below are three tables. The first two tables contain a data summary for the time 1 and time 2 images. These images were used to create the change image and their tables include; land cover classes, the number of pixels present in each class, and their corresponding values in acres.

The third table is a complete change matrix for time 1 and time 2 images and includes a smaller, generalized table, which groups similar classes together. Table three compares each class from time 1 to time 2 and illustrates the change that took place between classes. The table presents the total acres for each class, the total percent that each class represents, the total acres that changed, and the percent of change they represent.

## Tabular Summary: Southern Maine, June 9, 1986

	<b>CLASS</b>	<b>PIXELS</b>	<b>ACRES</b>	<b>PERCENT</b>
0	Background	0	0	0.00%
1	Unclassified	0	0	0.00%
2	High Intensity Developed	97382	21657	0.92%
3	Low Intensity Developed	138274	30751	1.31%
4	Cultivated Land	15934	3544	0.15%
5	Grassland	575405	127967	5.44%
6	Deciduous Forest	1061064	235974	10.04%
7	Evergreen Forest	343410	76372	3.25%
8	Mixed Forest	1504302	334548	14.23%
9	Scrub/Shrub	348194	77436	3.29%
10	Palustrine Forested Wetland	294386	65470	2.78%
11	Palustrine Scrub/Shrub Wetland	163377	36334	1.55%
12	Palustrine Emergent Wetland	75883	16876	0.72%
13	Estuarine Forested Wetland	0	0	0.00%
14	Estuarine Scrub/Shrub Wetland	0	0	0.00%
15	Estuarine Emergent Wetland	40837	9082	0.39%
16	Unconsolidated Shore	55268	12291	0.52%
17	Bare Land	19671	4375	0.19%
18	Water	5837882	1298310	55.22%
19	Palustrine Aquatic Bed	0	0	0.00%
20	Estuarine Aquatic bed	0	0	0.00%
21	Tundra	0	0	0.00%
22	Snow/Ice	0	0	0.00%
	<b>TOTALS</b>	<b>10571269</b>	<b>2350986</b>	<b>100.00%</b>

## Tabular Summary: Southern Maine, June 12, 1993

	<b>CLASS</b>	<b>PIXELS</b>	<b>ACRES</b>	<b>PERCENT</b>
0	Background	0	0	0.00%
1	Unclassified	0	0	0.00%
2	High Intensity Developed	106365	23655	1.01%
3	Low Intensity Developed	150632	33500	1.42%
4	Cultivated Land	16818	3740	0.16%
5	Grassland	648169	144149	6.13%
6	Deciduous Forest	1030022	229071	9.74%
7	Evergreen Forest	310520	69058	2.94%
8	Mixed Forest	1455879	323779	13.77%
9	Scrub/Shrub	368702	81997	3.49%
10	Palustrine Forested Wetland	285299	63449	2.70%
11	Palustrine Scrub/Shrub Wetland	165237	36748	1.56%
12	Palustrine Emergent Wetland	78876	17542	0.75%
13	Estuarine Forested Wetland	0	0	0.00%
14	Estuarine Scrub/Shrub Wetland	0	0	0.00%
15	Estuarine Emergent Wetland	41271	9178	0.39%
16	Unconsolidated Shore	55755	12400	0.53%
17	Bare Land	18232	4055	0.17%
18	Water	5839492	1298668	55.24%
19	Palustrine Aquatic bed	0	0	0.00%
20	Estuarine Aquatic Bed	0	0	0.00%
21	Tundra	0	0	0.00%
22	Snow/Ice	0	0	0.00%
	<b>TOTALS</b>	<b>10571269</b>	<b>2350986</b>	<b>100.00%</b>

Change Matrix and Tabular Summary: Southern Maine, from June 9, 1986 to June 12, 1993

	FROM / TO	High Intensity Developed	Low Intensity Developed	Cultivated Land	Grassland	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Palustrine Forested Wetland	Palustrine Scrub/Shrub Wetland	Palustrine Emergent Wetland	Estuarine Forested Wetland	Estuarine Scrub/Shrub Wetland	Estuarine Emergent Wetland	Unconsolidated Shore	Bare Land	Water	Palustrine Aquatic Bed	Estuarine Aquatic Bed	Tundra	Snow/ice	Total Acres	Changed				
2	High Intensity Developed	21631	2	1	11	1	0	2	4	0	1	1	0	0	1	1	2	1	0	0	0	0	21658	High Intensity Developed				
3	Low Intensity Developed	80	30467	4	71	16	10	30	53	1	0	7	7	0	4	2	6	3	0	0	0	0	30753	Low Intensity Developed				
4	Cultivated Land	0	0	3593	33	1	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3544	Cultivated Land			
5	Grassland	348	364	159	125442	77	5	31	1161	2	3	49	0	0	77	14	164	79	0	0	0	0	0	127975	Grassland			
6	Deciduous Forest	379	697	7	4959	226371	21	467	2845	45	4	5	0	0	21	7	98	48	0	0	0	0	0	235977	Deciduous Forest			
7	Evergreen Forest	242	449	8	3234	181	6977	208	3859	2	11	12	0	0	58	32	97	128	0	0	0	0	0	76377	Evergreen Forest			
8	Mixed Forest	461	563	3	6360	396	56	32191	4431	10	15	5	0	0	46	15	103	81	0	0	0	0	0	334556	Mixed Forest			
9	Scrub/Shrub	413	387	28	2741	1977	148	1247	79134	32	14	38	0	0	49	13	153	67	0	0	0	0	0	77438	Scrub/Shrub			
10	Palustrine Forested Wetland	50	84	1	571	12	0	46	299	63220	9	576	0	0	443	5	17	133	0	0	0	0	0	65472	Palustrine Forested Wetland			
11	Palustrine Scrub/Shrub Wetland	0	2	0	6	2	0	4	3	1	9046	0	0	0	0	0	8	0	11	0	0	0	0	9962	Palustrine Scrub/Shrub Wetland			
12	Palustrine Emergent Wetland	15	17	2	18	13	8	32	16	21	33	16484	0	0	121	17	21	62	0	0	0	0	0	16879	Palustrine Emergent Wetland			
13	Estuarine Forested Wetland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Estuarine Forested Wetland		
14	Estuarine Scrub/Shrub Wetland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Estuarine Scrub/Shrub Wetland	
15	Estuarine Emergent Wetland	8	4	3	7	1	0	4	1	112	4	220	0	0	35908	6	4	56	0	0	0	0	0	0	36338	Estuarine Emergent Wetland		
16	Unconsolidated Shore	10	2	0	11	6	6	4	8	0	24	16	0	0	2	12165	35	5	0	0	0	0	0	0	12292	Unconsolidated Shore		
17	Bare Land	16	34	20	672	8	4	3	157	1	6	33	0	0	12	36	9366	24	0	0	0	0	0	0	4376	Bare Land		
18	Water	3	6	1	25	13	19	37	22	4	10	97	0	0	10	83	6	1299160	0	0	0	0	0	0	1299497	Water		
19	Palustrine Aquatic Bed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Palustrine Aquatic Bed	
20	Estuarine Aquatic Bed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Estuarine Aquatic Bed	
21	Tundra	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Tundra
22	Snow/ice	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Snow/ice
<b>Total Acres</b>		<b>23,658</b>	<b>33,591</b>	<b>3,740</b>	<b>144,157</b>	<b>229,073</b>	<b>69,862</b>	<b>323,787</b>	<b>81,999</b>	<b>63,451</b>	<b>9,179</b>	<b>17,545</b>	-	-	<b>36,751</b>	<b>12,461</b>	<b>4,055</b>	<b>1,299,855</b>	-	-	-	-	-	-	<b>1,053,082</b>	<b>Total Acres</b>		
<b>Percent</b>		<b>2.23%</b>	<b>3.15%</b>	<b>0.36%</b>	<b>13.69%</b>	<b>21.75%</b>	<b>6.56%</b>	<b>30.75%</b>	<b>7.79%</b>	<b>6.03%</b>	<b>0.87%</b>	<b>1.67%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>3.49%</b>	<b>1.19%</b>	<b>0.39%</b>	<b>123.44%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>Percent</b>		
<b>Changed 1985-1995</b>		<b>1,988</b>	<b>2,749</b>	<b>197</b>	<b>16,182</b>	<b>-6,904</b>	<b>-7,315</b>	<b>-10,769</b>	<b>4,561</b>	<b>-2,021</b>	<b>97</b>	<b>665</b>	<b>0</b>	<b>0</b>	<b>413</b>	<b>108</b>	<b>-320</b>	<b>359</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>Total Acres that Changed</b>			
<b>Percent Change</b>		<b>9.22%</b>	<b>8.94%</b>	<b>5.55%</b>	<b>12.65%</b>	<b>-2.93%</b>	<b>-9.68%</b>	<b>-3.22%</b>	<b>5.89%</b>	<b>-3.09%</b>	<b>1.06%</b>	<b>3.94%</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>1.14%</b>	<b>0.88%</b>	<b>-7.31%</b>	<b>0.03%</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Percent Change</b>			

FROM / TO	Developed	Cultivated	Grassland	Forested	Scrub/Shrub	Wetlands	Bare	Water	Total Acres	Changed	Developed
Developed	52,180	4	62	59	57	10	11	3	52,413	233	Developed
Cultivated	1	3,593	33	2	0	0	0	0	3,544	41	Cultivated
Grassland	712	159	125,442	115	1,165	130	178	79	127,880	2,538	Grassland
Forested	3,345	20	15,123	681,496	10,475	234	373	368	711,449	29,958	Forested
Scrub/Shrub	602	29	2,741	3,410	79,198	120	173	79	86,553	7,257	Scrub/Shrub
Wetlands	180	6	601	128	318	126,198	78	262	127,771	1,573	Wetlands
Bare	62	20	663	32	196	95	15,683	29	16,699	1,116	Bare
Water	11	1	672	74	31	120	89	1,299,160	1,300,160	998	Water
<b>Total Acres</b>	<b>57,294</b>	<b>3,741</b>	<b>145,381</b>	<b>685,310</b>	<b>91,443</b>	<b>126,913</b>	<b>16,485</b>	<b>1,299,999</b>	<b>1,953,052</b>	<b>43,814</b>	<b>Total Acres</b>
<b>Percent of Total (Y2/Totals)</b>	<b>5.44%</b>	<b>0.36%</b>	<b>13.81%</b>	<b>65.89%</b>	<b>8.58%</b>	<b>12.05%</b>	<b>1.67%</b>	<b>123.45%</b>	-	<b>4.16%</b>	-
<b>Total Change (Y2-Y1)</b>	<b>4691</b>	<b>197</b>	<b>17491</b>	<b>-26139</b>	<b>4690</b>	<b>-653</b>	<b>-214</b>	<b>159</b>	-	<b>43814</b>	-
<b>Percent Change</b>	<b>9.31%</b>	<b>5.57%</b>	<b>13.66%</b>	<b>-3.87%</b>	<b>5.65%</b>	<b>-0.67%</b>	<b>-1.28%</b>	<b>-0.91%</b>	-	<b>4.16%</b>	-